

Case Study #14

HS2 INDEPENDENT
DESIGN PANEL

The Manchester Ship Canal viaduct, at Hollins Green near Warrington, promises to be one of the most spectacular features of the HS2 Phase 2b route. It is here that a 21st century railway comes together with 19th century infrastructure – presenting an opportunity for a particularly inspired and dramatic approach that celebrates a unique landscape. The design approach for the viaduct, developed to inform the Phase 2b Hybrid Bill, must ensure that that opportunity is exploited – and realised – to the full.

Process: The Independent Design Panel reviewed designs developed by Yee Associates and Mott MacDonald for the Manchester Ship Canal viaduct in September 2018. The meeting included a site visit led by HS2 Ltd and the design team. The panel confirmed that design thinking was moving ahead in the right direction: an understanding and appreciation of the surrounding context had led to sound design decisions. The panel emphasised the need to skilfully integrate engineering, architecture, landscape and placemaking. Learning lessons from Phase One – for example, the design approach adopted for the Colne Valley Viaduct – will be invaluable. While a simple and functional approach to the design was welcomed, attention should now focus on the aesthetic of the viaduct – developing the details that will bring railway and canal spectacularly together.



Manchester Ship Canal Viaduct

This is the fourteenth in a series of case studies about the work of the HS2 Independent Design Panel.

Project headlines

- The Manchester Ship Canal Viaduct will be approximately 1.3km long, and 28m high at its highest point over the canal cutting
- Designs developed for the Manchester Ship Canal viaduct will feed into the Hybrid Bill for Phase 2b, programmed to be submitted in 2020
- The HS2 Independent Design Awards, November 2018, praised the landscape led approach and the viaduct's potential to be a stunning feature of the Phase 2b route
- Community consultation has played a significant part during design development
- Construction is expected to begin in 2025

Panel comments

The panel's comments on the emerging design for the Manchester Ship Canal viaduct included the following points.

1. Learning from Phase One

Opportunities to learn from Phase One to streamline and improve the Phase Two design process must be seized – for example: starting from landscape led design; constructively engaging with communities affected by the Phase Two route; and putting into a place an effective procurement process for main works civil contractors. The Manchester Ship Canal viaduct offers opportunities to build on the most successful aspects of Phase One and, with innovation and creativity, take those successes even further. The panel points, for example, to lessons to be learned from the approach to the Colne Valley Viaduct – where landscape and structure are being brought together to stunning effect.

2. Phase Two Hybrid Bill

Phase Two is at a strategic design stage – with Hybrid Bill designs for Phase 2a already submitted to Parliament, and preparations for the Phase 2b Hybrid Bill moving ahead. Principles set through this process are essential to achieving high quality design. Designs developed by Yee Associates and

Mott MacDonald for the viaduct will inform documents submitted in 2020 as part of the Phase 2b Hybrid Bill; the next design iteration will be critical in demonstrating the extent to which the design quality aspired to can be achieved by what is proposed for the Hybrid Bill. The panel recommended providing additional information, including a strong narrative to convey the sense of the place to be created, to support the technical drawings and information required for the Hybrid Bill and to set the standards for future contractors.

3. Viaduct Design

The design team has adopted a landscape led approach – which the panel strongly supports. It recommended going beyond technical requirements and developing the aesthetic of the viaduct within its very particular landscape.



The panel suggests exploring alternatives to a symmetrical design – especially as the full length of the viaduct will not be seen in any views. The design could, for example, respond to the different contexts either side of the canal. Views of the viaduct will be mainly elevational: how the piers are expressed will therefore be especially important. They could, for example, have a faceted form that reduces their bulk, creates shadow and texture, and introduces an element of craft.

4. Community Engagement

Development of the design of the Manchester Ship Canal viaduct has benefited from regular consultation with the community – including the residents of Hollins Green. Trust has been built up: HS2 Ltd must work hard to maintain this as the design evolves. At the heart of consultation should be the community's experience of the place where they live – and the benefits that HS2 will bring. The Green Corridor Concept could be a positive focus for future discussions, and the panel recommends that HS2 Ltd broaden out consultation to a more regional approach. It is clear from Phase One that disruption from construction and noise are major considerations for those affected by the HS2 route – confronting these issues openly and honestly will help to identify approaches that are acceptable to the community.